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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,779	09/29/2003	Shuhei Yamada	011.2-11335-US01	2487
490	7590	10/13/2006	EXAMINER	
VIDAS, ARRETT & STEINKRAUS, P.A. 6109 BLUE CIRCLE DRIVE SUITE 2000 MINNETONKA, MN 55343-9185			GOUDREAU, GEORGE A	
			ART UNIT	PAPER NUMBER
			1763	

DATE MAILED: 10/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/673,779	Applicant(s) YAMADA ET. AL.	
	Examiner George A. Goudreau	Art Unit 1763	_____

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on (8-18-06' to 9-11-06').
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-11 and 18-28 is/are pending in the application.
- 4a) Of the above claim(s) 11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-10, and 18-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

George A. Goudreau
GEORGE GOUDREAU
PRIMARY EXAMINER
9-06'

Attachment(s)

- | | |
|--|--|
| <p>1) <input type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____</p> | <p>4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application</p> <p>6) <input type="checkbox"/> Other: _____</p> |
|--|--|

1. Claims 1-5, 7-10, and 18-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

-The copy of the claims newly submitted by applicant is illegible. (i.e.-Applicant is requested to resubmit a legible copy of the claims. Should the claims in the present application become allowable over the prior art of record, the printer will not be able to properly read the claims in order to correctly print them.)

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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4. Claims 1-5, 7-10, and 18-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et. al. (2001/003672) further in view of Tanaka et. al. (2001-118,815).

Inoue et. al. disclose a process for cmp polishing a wafer with a cmp slurry, which is comprised of colloidal silica abrasive particles, H₂O, tetramethylammonium hydroxide (TMAH), and a water-soluble polymer such as hydroxyethyl cellulose. The colloidal silica may have a primary particle size of 35 nm, and a secondary particle size of 70 nm as deduced from laser scattering. This is discussed specifically on pages 4-6; and discussed in general on pages 1-7. Inoue et. al. fail, however, to specifically disclose the following aspects of applicant's claimed invention:

- the specific cmp process parameters, which are claimed by the applicant; and
- the specific usage of colloidal silica particles with the specific properties, which are claimed by the applicant

Tanaka et. al. teach that it is desirable to employ colloidal silica particles with a primary diameter of (8-50) nm., and a secondary diameter of (12-200) nm. in a cmp slurry, which is used to cmp polish a wafer. This is discussed specifically in the abstract; and discussed in general on pages 1-8.

It would have been obvious to one skilled in the art to employ the colloidal abrasive particles of Tanaka et. al. in the cmp slurry, which is taught by Inoue, based upon the following. This simply represents the usage of an alternative, and at least equivalent means for providing a source of abrasive particle in a cmp slurry to the specific means which are taught by Inoue et. al. Further, Tanaka et. al. teach that it is

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desirable to employ their abrasive particles in a cmp slurry, which is used to cmp polish a semiconductor substrate.

It would have been prima facie obvious to employ any of a variety of different cmp polishing process parameters in the cmp polishing process taught above. These are all well-known variables in the cmp polishing art, which are known to affect both the rate and the quality of the cmp polishing process. Further, the selection of particular values for these variables would not necessitate any undue experimentation, which would have been indicative of unexpected results.

Alternatively, it would have been obvious to one skilled in the art to employ the specific process parameters which are claimed by the applicant in the cmp polishing process taught above based upon *In re Aller* as cited below.

Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F. 2d 454, 105 USPQ 233, 235 (CCPA).

Further, all of the specific process parameters which are claimed by the applicant are results affective variables whose values are known to affect both the rate, and the quality of the cmp polishing process.

5. Applicant's arguments filed 8-18-06', and 9-11-06' have been fully considered but they are not persuasive.

Applicant argues the following points regarding the examiner's rejection of their claimed subject matter.

-Applicant has submitted a declaration by the invention, which overcomes the examiner's previous prior art rejections of their claimed subject matter by

establishing the unexpected results which are achieved using applicant's claimed cmp slurry.; and

-The prior art teachings of the Inoue et. al. reference, and not combinable with the prior art teachings of the Tanaka et. al. reference since the two references are directed toward solving different problems (i.e.-the cmp polishing of a face of a semiconductor wafer versus the cmp polishing of an edge of a semiconductor wafer.)

The examiner must disagree.


-The entire response submitted by applicant is illegible. This includes the copy of the claims, the remarks by applicant's attorney, and the affidavit submitted by applicant. (i.e.-Applicant is requested to resubmit a legible copy of the claims, the remarks by applicant's attorney, and the affidavit submitted by applicant so that the examiner may properly consider applicant's response.); and

-The teachings of the Inoue et. al. reference are combinable with the teachings of the Tanaka et. al. reference contrary to what applicant purports since both references are directed toward the cmp polishing of a semiconductor wafer. The fact that the edge of a semiconductor wafer is cmp polished in one reference while the face of a semiconductor wafer is cmp polished in another reference is irrelevant.

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6. Any inquiry concerning this communication should be directed to examiner

George A. Goudreau at telephone number (571)-272-1434.


George A. Goudreau
Primary Examiner
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